

SUMMER 2020

Sheet Metal

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British Columbia

Journal

STAYING STRONG

Canada's Post-COVID Plan

Annacis Island Waste Water Treatment Plant

Meet the COVID Kids

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Official Journal of Record for SMACNA-BC



PROMOTING GROWTH AND STABILITY IN OUR INDUSTRY

Formed in 1969, the British Columbia Sheet Metal Association (SMACNA-BC) was the first international chapter of the Sheet Metal & Air-conditioning Contractors National Association (SMACNA). Founded in 1934, SMACNA traces its history to the National Association of Sheet Metal Contractors established in 1910, and has 2,300 members worldwide.

SMACNA-BC is a member-driven association representing unionized sheet metal contractors in the Mainland of BC, and suppliers to our industry. It promotes the growth and stability of the members and industry.

OUR MANDATE

- To improve the financial stability and business conditions of the sheet metal industry, and to develop and promote methods to improve managerial proficiency
- To improve quality, efficiency and productivity of this industry, and to implement high standards of work
- To establish and maintain high ethical standards of conduct between members of the Association, and between members and owners, architects, engineers, other contractors, and the public
- To study and help in the development and enforcement of governmental codes and regulations, and such legislation as may be necessary for the best interest of the public and the sheet metal industry
- To promote harmony in labour relations
- To exchange technical, professional, and educational information with other contractor associations in the sheet metal industry and its allied trades in Canada and other countries
- To affiliate as a Chapter with the Sheet Metal & Air-conditioning Contractors National Association, Inc.



[BC Sheet Metal Association \(SMACNA-BC\)](#)

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STRENGTH IN NUMBERS

When I read about the hope and resilience SMACNA contractors, the Sheet Metal Workers Training Centre, and SMACNA-BC leadership have demonstrated over the past several months, I am reminded about why working closely with the construction field as an editor was an easy, natural choice. At the time, back in 2007, I wondered if it would be too hard, too intimidating, too technical, but really, it was like coming home. I am not sure if it is because several men in my family, including my father, worked their entire lives in construction, or if it is because I completed an apprenticeship in my youth (not in construction) so I can relate to the learning process, or because I just can't pass up a good tailgate chit chat, but this is an industry I have always felt good in, found interesting, and deeply respected.

Although BC construction slowed, it didn't close down in March and April, and this had many repercussions for the men and women working in the field. The "feed one's family versus stay healthy and safe" dilemma was a difficult one, but SMACNA-BC contractors pulled through. They rolled with the punches, scrambled like everyone else for sanitizer and the right words to offer the workforce, but most of all, they looked after each other. Find out how on page 8.

The Sheet Metal Workers Training Centre stands out in many ways—it has grown exponentially over the past decade, it has



By / Jessica Kirby
Editor, Sheet Metal Journal

implemented some of the industry's most advanced learning technology, and it is the cornerstone of developing future leaders in the sheet metal industry. Now, it can add managing through a pandemic to its roster of accomplishments. Staff and instructors exercised strength, ingenuity, and flexibility to develop a hybrid education model that will undoubtedly lead the way through the rest of the year, well into 2021, and beyond. See how they did it on page 15.

Every once in a while a project comes along that truly wows the crowd. Page 13 looks at how Apollo Sheet Metal did just that at the Annacis Island Water Treatment Plant, fabricating duct almost large enough to park a car in, and working with non-traditional materials while they were at it. The photos tell the story alone, but be sure to read about the challenges of this project and how the company met them with confidence.

Looking ahead, contractors in all facets of construction still have a lot to face. Provincial health officials feel autumn will bring a second wave of COVID-19 and, given the figures over the past couple of weeks, it seems 100% likely. Besides that, the trickle of investment that occurred in March and April will eventually catch up with the industry and contractors will be the ones to feel the consequences. Sandra Skivsky is director of marketing and business development for the National Trade Contractors Coalition of Canada (NTCCC), and she weighs in with her ideas on the responsible way forward for federal and provincial governments. Read more on page 10, and let me know what you think of her recommendations.

Finally, I have to give a nod to SMACNA-BC, which has had to make difficult decisions to cancel its events—including its world famous convention and epic golf extravaganza—in order to make the safest, most responsible decisions possible. At the same time, the office has stayed open and ready to assist contractors in any way possible. Well done.

As we move forward, uncertain for the immediate future but stronger together, I will continue to seek out the stories that you are creating with your commitment to the industry and each other. If you have such a story—a great project, a unique solution to a problem, an act of helping in the face of chaos, email me. I'd love to share your story and others would love to read it. ■

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SMACNA-BC MOVES FORWARD

Firstly, I truly hope that you and yours are all doing well out there, and wish everyone the best of health.

It goes without saying that 2020 is going to be a year that will go down in the history books. With all of the 2 metre (6 ft) social distancing, face masks, staying home if you are sick, hand washing for 20 seconds, (singing “Happy Birthday” twice), Zoom meetings, and the list goes on, I am happy to report that SMACNA-BC contractors and, in general, construction in BC, are virtually back to where they were. In fact, June 2020 hours for unionized sheet metal, were fractionally higher than those in 2019. Who knew?

Those of us who reside in BC recognize that the number of cases and mortality rate are significantly lower than those in other major Canadian and US cities. The lower numbers can be attributed to the BC Provincial Health Officer, Dr. Bonnie Henry, and British Columbians for listening and changing their behaviour when health officials raised concerns about how to address COVID-19.

Even though BC is in Phase 3 of the Restart Plan, there are still restrictions with respect to in-person gatherings larger than 50 people; therefore, the SMACNA-BC Board of Directors has assessed hosting membership meetings, inclusive of the annual golf tournament, and has determined that there is still a risk of spreading COVID-19. As a result, board members have unanimously agreed that these events be cancelled or postponed until further notice. On a side note, the SMACNA-BC board meetings continue to be held on a regular basis. The same goes for the SMART Local 280/SMACNA-BC Joint Conference Board meetings.

BC SHEET METAL ASSOCIATION (SMACNA-BC) ANNOUNCES 2020-21 ELECTED POSITIONS

SMACNA-BC is pleased to announce its Board of Directors and Officers for fiscal 2020, elected via virtual annual general meeting on May 11, 2020.

- Kevin Taylor, City Sheet Metal Ltd. — President
- Dan Taillefer, Viaduct Sheet Metal Ltd. — President-Elect
- Bernie Antchak, Northwest Sheet Metal Ltd. — Immediate Past-President/Treasurer/Secretary
- Phil McDonald, Summit Sheet Metal Ltd. — Vice-President
- Mark McLaren, Ridge Sheet Metal Co. — Director
- Al Benning, Ames Metal Fabricators 82 Ltd. — Director
- Angelo Paris, Apollo Sheet Metal Ltd. — Director
- Mark Kuelle, Austin Metal Fabricators LP — Director
- Aaron Smith, Smith Sheet Metal Works Ltd. — Director / SMACNA, Inc. Director
- Brad Popoff, Equity Plumbing & Heating Ltd. — Northern BC Regional Chair
- Bruce Sychuk — Executive Director



By / Bruce Sychuk, Executive Director, SMACNA-BC

The membership and Board of Directors would like to congratulate Mike Davis, Samson Metal Ltd., for his election to the SMART Local 280 / SMACNA-BC Joint Conference Board and Aaron Smith, Smith Sheet Metal Works Ltd., for re-election to the Sheet Metal Industry Training Board.

SMACNA-BC, in recognition of dedicated service to the BC Sheet Metal Association and the sheet metal industry, elected two new SMACNA Life Members: Len Mueller, Austin Metal Fabricators LP, and Mark Halvorsen, Viaduct Sheet Metal Ltd.

SMACNA-BC recognized two individuals for their long-term service to SMACNA-BC. Dan Mauro, Spectrum Sheet Metal Ltd, has served on the SMACNA-BC Board of Directors since 2011, and Neil Deppiesse, Horizon Metal Systems Inc., has served on the SMART Local Union No. 280 / SMACNA-BC Joint Conference Board since 1995.

SCHOLARSHIP WINNERS ANNOUNCED

It is my pleasure to congratulate Lynnea Lindsay and Benjamin Charbonneau who both received SMACNA British Columbia Endowed Scholarships for \$2,000, which are endowed by the SMACNA College of Fellows as educational aid for students affiliated with the SMACNA-BC chapter. Both of these young people have shown commitment to their studies and to their futures by meeting all the criteria for these scholarship awards. That means not just having good grades, but also contributing to their communities, being active in their personal and academic development, and demonstrating positive and ambitious goals for their schooling and overall futures. On behalf of all of us at SMACNA-BC, we congratulate you and wish you a bright and happy future in your education.

In closing, please be advised that the SMACNA-BC office is still running business as usual. Should you have any questions or concerns, please do not hesitate to contact Michelle Rodford or myself. I would be amiss if I did not offer you Dr. Bonnie Henry’s famous quote: “Be kind, be calm, and be safe” ■

MEET THE BOARD

MARK KUELLE, AUSTIN SHEET METAL

Mark Kuelle, estimator and project manager for Austin Sheet Metal LP, is serving a four-year term as a director on SMACNA-BC's board of directors. He is also currently a trustee for the Sheet Metal Industry Training Board. Austin Sheet Metal LP specializes in commercial and industrial sheet metal and metal fabrication. Kuelle has been a part of the sheet metal industry for 26 years, and when he entered it was because of the positivity his father experienced being part of the trade.

"My father was a sheet metal mechanic," Kuelle says. "I saw how the trade made him detail-oriented, and I saw the pride he felt in producing quality work. I carry this same attitude with me today, and I echo his thoughts that our industry is built on quality."

In fact, his professional philosophy, the matters he holds above all else in his work, are quality and service. Over the years, the sheet metal industry has faced many challenges, the most important of which is recruitment—the enrolment and training of personnel to fulfill the growing needs of the industry. "The sheet metal industry should really be emphasized as a viable career choice at the high school level," Kuelle says. "Some Red Seal trades are represented, but it should be all of them."

Of course, there have been many opportunities as well, several of which have to do with advancements in technology. Moving



forward with 3D and 4D modelling for complex mechanical projects has benefits in terms of speed, productivity, and accuracy but it also places pressure on companies to keep up and be forward-thinking.

"Our challenge and opportunity is to stay ahead of advancements in technology and be the leader in adapting, changing, and modifying current SMACNA standards to suit these advancements," Kuelle says. "Energy saving systems are becoming more and more prevalent."

In doing so, SMACNA has an important role to play in advancing the industry's future—continuing to set the standard for quality workmanship.

Read more about Austin Metal Fabricators LP at www.austinmetal.com ■

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WORKERS' COMPENSATION CHANGES TO BETTER SUPPORT WORKERS

Changes to the *Workers Compensation Act* will provide better support to injured workers and their families and enhance WorkSafeBC's ability to investigate workplace incidents, while keeping premiums low.

"For too many years, we have heard from injured workers in BC that the system lacks fairness and doesn't work for them or support them through their injuries," said Harry Bains, Minister of Labour. "Today's changes are an important step in modernizing the *Workers Compensation Act*, ensuring workers and their families get the support they need, while also increasing everyone's confidence in the system."

The proposed changes focus on improving supports for injured workers, while also advancing worker safety. The changes include:

- raising the maximum annual salary amount on which workers' compensation benefits are based;
- authorizing WorkSafeBC to provide preventative medical treatment before a claim is accepted;
- giving powers to the court to issue WorkSafeBC search and seizure warrants that are appropriate for investigating workplace safety infractions; and
- giving people a voice in serious workplace prosecutions and trials by using victim impact statements.

This legislation will fast-track the effective date of presumptions if established by WorkSafeBC's board of directors for occupational diseases caused by viral pathogens. The presumption would simplify the process for workers who make a workers' compensation claim if they contract viruses on the job. This would ensure that people who are at higher risk of contracting COVID-19 at work are able to access benefits more quickly.

During the COVID-19 pandemic, WorkSafeBC is allowing businesses to defer paying their premiums for six months without penalty or interest. As well, WorkSafeBC is waiving premiums on wages paid to workers of employers receiving the Canadian Emergency Wage Subsidy for the duration of the program.

The amendments are informed by three expert reviews completed during 2018 and 2019 by Lisa Jean Helps, Paul Petrie, and Terry Bogoyo. Jeff Parr, an industry expert, then consulted with employers, as well as labour and Indigenous organizations, on potential amendments identified in these three reviews and made recommendations. Parr's recommendations, and subsequently these legislative changes, also considered workers' compensation systems in other Canadian jurisdictions and possible effects on future employer premium rates.

Improving fairness in British Columbia's workplaces is a shared priority between government, the BC Green Party caucus, and independent MLA Andrew Weaver, and supports the commitment in the Confidence and Supply Agreement.

Quick Facts:

- Of the more than 44,000 injured workers currently receiving permanent disability benefits because of a work-related injury, about 35% are in the greater Vancouver area and the rest are spread throughout all regions of B.C.
- Each year, there are over 100,000 new claims due to workplace injury or fatality.
- Last year in BC, there were 140 workplace fatalities. Of these, 84 were due to occupational disease, 40 were due to traumatic injury, and 16 were the result of a motor vehicle incident. In the last five years, WorkSafeBC has conducted an average of 131 investigations per year. In 2019, WorkSafeBC conducted 141 investigations.
- The purpose of a WorkSafeBC investigation is to determine the cause of a serious incident and any contributing factors, so that similar incidents can be prevented from happening in the future.

Learn More:

To read the reports by Helps, Petrie, Bogoyo and Parr, visit: <https://www2.gov.bc.ca/gov/content/government/s/organizational-structure/ministries-organizations/ministries/labour/ministry-reports> ■

MEN SUPPORTING WOMEN IN TRADES

Are you a male leader/influencer in the #skilledtrades or related organization? Apply for the BC Centre for Women in the Trades three-day spokesmen train-the-trainer session tentatively scheduled for November 4-6.

continued on page 22

Do you have an interesting article idea? Sharing it is easier than you think. Projects, news, and profile suggestions are welcome in SMJ.

Reach out to our editor, Jessica, at 250.816.3671 or email jkirby@pointonemedia.com



Staying STRONG

COVID-19 brought uncertainty and cost increases to the sheet metal industry, but SMACNA-BC contractors have weathered the storm

By / Jessica Kirby
Photos courtesy of Summit Sheet Metal

It's no secret that the first two weeks of March 2020 turned the world upside down. Global and regional health directives came out by the hour, advising individuals and businesses on how to deal with the COVID-19 pandemic. Construction was deemed an essential service, but crews were worried and management had important decisions to make.

Bernie Antchak, principal with Northwest Sheet Metal, says the initial shutdown caused some upset as the workforce struggled to understand the best course of action. Because construction was deemed an essential service, coming to work became, for some, a difficult choice.

"Once the government announced if you feel any sickness and stay home you will get benefits (CERB), we had 20% of our workforce stay home as they had colds or were just worried about contracting this illness," Antchak says.

The first week, field installation crews were worried while onsite because they felt there were too many people on these sites, and they feared the possibilities of transmission were high. Productivity suffered.

"We were confident it was close to 25% production loss through safety procedures, which, at the time were all over the place," Antchak says. "Some sites had none, some sites actually closed for a short term, and some were in the middle, so to speak. As a company, we felt if we had to remain open we would lose our shirts if this continued."

Fast forward a month after the initial week of closures and health directives, and crews were more diligent. Companies were sharing COVID policies and procedures, and production loss gained ground.

"By then, productivity loss had improved and was approximately 5–10%," Antchak says. "This was due to social distancing, access to work, and PPE variables. Of course, there is also a cost for the pandemic, as cleaners, wipes, masks, and other supplies weren't cheap."

Mark McLaren, owner at Ridge Sheet Metal, says the situation during the first few weeks was the same for his crew—many stayed home and those who didn't were concerned about safety and cleanliness protocol.

"We didn't have any jobs shut down, but we couldn't man jobs correctly because half of the crew stayed home for two weeks," McLaren says. "That was the worst of it. They dwindled back after that, and things seem to have settled since then."

On job sites, with multiple trades and variation from company to company on how safety protocols are carried out, social distancing and other measures can be difficult and definitely affect productivity.

"As an example, you can't put more than four guys in a lift, so it takes a long time to get a crew up to the top floor," McLaren says. "Overall, I'd say we are adjusting fine. We don't hear much about workers' concerns any more. People just go to work and wear masks if they have to."

“When COVID first hit, it was surreal,” says Phil McDonald, co-owner of Summit Sheet Metal. “I was trying to figure out if we were in a reality TV program of some kind.”

Everyone at Summit knew the situation and followed the news, but then a foreman’s wife was sent home because she’d tested positive for COVID-19. “Right away, we sent the crew home for 14 days’ self-quarantine,” McDonald says. “It turned out to be a false positive, but we weren’t taking any chances.”

In the meantime, Summit’s management team sent an email to crew members letting them know they were not being forced to work and to stay home if they felt unwell or uneasy. The crew went from 63 to 24 overnight.

“We sent out everything we were getting from the government and SMACNA-BC about subsidies, how to apply, and how to stay safe,” McDonald says. “We explained we will get through this together, and made sure everyone—the crew, journeymen, apprentices, pre-apprentices, and their families—got that message and information.”

While the workforce was self-quarantined, McDonald and the other management got to work keeping up with daily-changing health protocols, sending more information as it became available, and trying to source PPE, sanitizer, and masks.

With these materials hard to come by at the time, McDonald approached an acquaintance at Central City Brewers + Distillers who was able to begin supplying hand sanitizer by April 2.

“To be honest, it was all hands on deck,” McDonald says. “We were scrambling to meet those protocols and fill jobs with a smaller crew. We were hammering it out, but that initial stage didn’t last long. About a week later, the workforce was trickling in.”

One important factor in managing the situation was that some job sites were adequately prepared and following all requirements while others were behaving as though nothing was happening.

“We had some smaller jobs close down, and others were emailing us asking that we get crews in there to finish the work,” McDonald says. “Then we had another situation where some of our job sites had false positives. It was tough, but we made it work.”

And, consumables weren’t the only costs. Besides PPE and cleaning solutions, contractors absorbed the cost of having a staff member onsite sanitizing door handles and surfaces and ensuring proper protocols were being followed.

“I’d say we are getting used to the ‘new normal’ but it’s definitely not over,” McDonald says. “Last month we had one job that tests temperatures each day and just the other day another company introduced a new protocol where we have to assign a COVID representative on the site.”



As time goes by, attitudes have changed, Antchak says, and things are starting to level out. Moving into fall when a second wave is expected, he feels like his crews will be better prepared to handle whatever comes next. “We as a company felt lucky that we were still operational and turning dollars in a positive note, while so many were shut down with large losses,” Antchak says. “We’ve adapted to the procedures and practise safe measures.”

One big take away, since the market essentially shut down during this time, was that for some companies, not many purchase orders were being given out. That meant some companies panicked and through the tender process became very hungry, dropping their profits just to get a job.

“It’s a very unhealthy attitude to have as an industry,” Antchak says. “We need to maintain our margins and remain profitable. This will essentially just create a ‘rob Peter to pay Paul’ effect down the road.”

McLaren agrees: prices for some jobs got far too low, a scenario he finds hard to understand. “COVID has affected schedules on ongoing jobs so we just picked up some right-now work to keep going,” he says. “I guess people are just trying to keep their crews busy, but it’s all about timing and that will catch up with them eventually.”

That resilience is what kept Ridge Sheet Metal going through those initial weeks. “For us, it was just the ability to roll with it and away we went,” McLaren says. “Sheet metal guys are good for the most part. They are just trying to go to work and make a living for their families. They want to stay healthy, but they are willing to get the job done.”

““The bidding, quoting, receiving, and reacting to lead times of materials was insane,” McDonald says. “But it didn’t end up affecting us. We were estimating full time and had to pass up some quotes. We weren’t throwing lower numbers because there was so much coming through, it was coming in faster than we could react. We stayed the course.” ■

Around the Bend: Canada's Post-COVID Plan



© Can Stock Photo / alphaspirt

By / Sandra Skivsky, Director of Marketing & Business
Development for NTCCC member Canada Masonry Centre

The National Trade Contractors Council of Canada (NTCCC) believes the construction industry in Canada has not seen the last of the COVID-19 effects; in fact, the real future of the industry may have only just begun.

To move forward, construction will need a two-phased approach to remaining a leading sector in Canada's economic recovery. The first is to address the costs and contract issues that are arising from the work being done since mid-March. The second phase addresses the risks that the industry needs to mitigate in order to operate to its fullest potential during the pandemic and following its resolution.

Phase 1 – Survival

Phase I solutions need to be implemented within four to six months and will ensure the sector remains in a stable position to aid in economic recovery.

Although only Quebec and Ontario construction saw partial shutdowns, all provinces experienced project delays and some shutdowns. Those firms who continued to operate underwent major adjustments to keep workers safe and comply with health and safety directives. Four key problems that are particularly challenging for trade contractors have resulted:

- New and unforeseen costs
- Reduced productivity
- Schedule delays
- Liquidity concerns

Keeping workers safe has always been, and will always be, the top priority of the construction industry. However, the contracts under which the industry was and is operating did not include the extraordinary measures required. As companies attempted to obtain the increasingly scarce sanitization and safety items, they have incurred additional costs. Contractors will be expected to absorb additional costs on projects where contracts have already been awarded. There has been a proposal from the Canadian Construction Association for a COVID-19 construction emergency relief fund that would help mitigate these costs.

Worker productivity has also been impacted. The first few weeks were confusing, and the framework provided by public health sources was evolving almost daily. It took time to adapt. There are similarities between jurisdictions, but there persists a variety of rules and guidelines from coast-to-coast. This, along with declined workforce availability, negatively affected productivity. The industry adapted quickly, but it was at a cost to the contractors. Even as construction operations become acclimatized to the 'new normal', the procedures in place

still have an impact on productivity. It means higher costs to trade contractors, as equipment needs to be on a site longer than budgeted, and the timeframe for completing the work is extended, which means contractors are billing less each month while experiencing higher costs. For those sites that had to shut down contractors incurred de-mobilization costs.

This leads to the issue of contractual obligations around construction schedules. All projects have been delayed, whether they were shut down or continued to operate. Catching up to those schedules while experiencing reduced productivity will be impossible. In some cases, there may be additional damages associated with missing contractual timelines. Not every contract has a force majeure clause, and those that do may not cover a pandemic. The last thing the industry and the government need is an increase in legal actions to try to resolve. It will further

Our industry is playing catch-up. Trade contractors are restarting projects, finishing the ones that should have been completed by now, and looking for new work.

weaken the industry and reduce its ability to respond to new work if stakeholders are tied up in court and facing greater financial and time-related pressures.

All these factors lead to a concern about liquidity that the industry will face over the next seven months. In construction, payment terms have been averaging nearly 70+ days, and that issue was a driving force in getting federal and provincial prompt payment legislation enacted.

To illustrate, let us assume payments are made on a 60-day basis. A trade contractor works in month one, submits the invoice to the general contractor, who submits it to the owner, the owner pays promptly, and the money flows to the trade contractor at the end of month two or early in month three. In January 2020, a trade contractor would be collecting receivables from November 2019, and in April 2020 they would be collecting receivables from February 2020. The impact to cashflow will be now obvious. In May 2020, if we were well a contractor would be collecting receivables from March 2020 and that is when the first major impacts of the pandemic appeared. May 2020 is also when construction restrictions were lifted in both Ontario and Quebec; however, it will take time and costs to get the projects re-started.

Our industry is playing catch-up. Trade contractors are restarting projects, finishing the ones that should have been completed by now, and looking for new work. New projects require an investment from the trade contractor for the first 60 days as they await payment. In the meantime, they must pay salaries and benefits, rent or allocate their own equipment, ensure all



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health and safety equipment is there, and pay for materials. At the same time, cashflow is much lower than normal. The cashflow for June will be even worse. There is a strong possibility of payment timelines being stretched, which was increasingly common after the most recent downturn. Longer payment timeframes will further exacerbate the situation.

The spectre of rising insolvencies looms. An April 2020 Ontario Construction Secretariat survey of general and trade contractors showed that, under current conditions, 44% felt they would be facing bankruptcy in three to six months. Banks should be encouraged to take a longer-term view on the financials of contractors, including looking at receivables that are 90+ days. Public sector owners should review payment terms and contract schedules and ease the impact both can have on the industry. We encourage the federal government to bring this recommendation forward to provincial governments.

This “cash crunch” will limit the ability of construction contractors to hire and train workers, invest in new capital, and take on new work. These limitations will hurt the economy in the short term and create scarring over the longer-term. The severity of the impact will depend on individual companies’ balance sheets, their levels of reserves, and other variables. The fact remains that the majority of the industry is made up of small companies who do not have the financial reserves to ameliorate diminished cashflow.

These are the risks and damages that the industry is facing within 8 to 12 months. All governments should look at how they can work with the industry to mitigate those in a fair and reasonable manner. The stronger and more financially stable the construction industry emerges from 2020, the better the longer-term prospects will be for the economy as a whole. Construction will also be in a better position to undertake programs that meet governments’ objectives to have a positive impact in a number of socio-economic areas.

Phase II – Recovery

The industry cannot afford to wait until all issues in Phase I are resolved before beginning to look at and embrace future work. The major questions trade contractors and their supply chain are asking are what is coming down the construction project pipeline four to five months from now, what projects will go forward, and which will be postponed or cancelled. Right now, most areas of the country have work in progress. In provinces where construction was shut down there is a back-log, and there are some major multi-year projects that will continue to provide some stability. For the construction industry to increase employment opportunities and invest in training and technology, there needs to be a clear, national vision of the next two to three years.

The three necessary factors that the construction industry needs to drive economic recovery are:

1. A tripartite plan between the federal and provincial governments and industry for deploying stream of projects over the next two to three years.
2. Liquidity—contractors need enough cashflow to meet current obligations and take on more work.
3. A healthy and willing skilled workforce that feels safe on the job.

There are many negative outcomes that trade contractors would like to see mitigated over the months ahead, but actively replacing our aging workforce is absolutely vital. A new apprentice cannot be expected to enter a job site and increase productivity. In fact, the opposite is true. Businesses must be incentivized to train new workers, and having confidence in the availability of new projects is also vital. Increased retirements will reduce the availability of mentors for new apprentices, which is why it is important to advance a near-term strategy to recruit talent into the construction sector.

The construction industry has risen to the occasion and met the challenges it has faced. However, at this point no one has the ability to predict the outcome and interaction of all the issues mentioned. Some very basic things the industry and owners can do is communicate, plan in a more holistic and sustainable manner, and insert some flexibility into the system. ■

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Living

LARGE

Apollo Sheet Metal tackled some huge ductwork at the Annacis Island Waste Water Treatment Plant Stage V Expansion – Phase I

By / Jessica Kirby • Photos courtesy of Apollo Sheet Metal

To say the FOA exhaust system at Annacis Island Waste Water Treatment Plant Stage V Expansion – Phase I required some high-level planning and consideration is an understatement to say the least—and this is not the project for understatements. The FOA exhaust system, which is pressure rated at -2.5 to -5 kPa, required ducting up to 84” in diameter and used three different material types—two of which you don’t necessarily learn about in sheet metal school. However, despite its challenges and learning curve, the project was a huge success, thanks to the skilled craftspersons at Apollo Sheet Metal in Coquitlam, who supplied and installed all components.

The stainless steel FOA ductwork required more than 500,000 lb of 316 stainless steel, all fabricated in-house. The pipe/duct was up to 84” diameter, fabricated from 3/16” stainless plate, and the pipe supports were fabricated from 1/2” to 3/4” stainless plate. The pipe sections were assembled in up to 35’ long spool pieces, possible because of Apollo’s large fabrication plant with dual overhead cranes. Apollo used an electrochemical process to clean and passivate the welded joints on the stainless steel.

The project also required approximately 1,200 linear feet of 30–36” SDR-17 high-density polyethylene (HDPE) FOA ductwork. HDPE at 36” weighs 100 lb per linear foot, and it was supplied in 50’ lengths, complete with electrofusion couplers. The pipe hangers and supports were fabricated from 3/4” stainless plate.

The third material component was fiberglass reinforced plastic (FRP) FOA ductwork. The pipe was spooled and fabricated in China, shipped to Canada in containers, and detailed in Coquitlam by Apollo. The FRP duct is up to 84” in diameter and has a 5/16” wall thickness.

The main challenge with the project was using materials that are outside of Apollo’s regular wheelhouse. HDPE and FRP required different techniques and additional learning, but the team was up for the challenge. Shawn Birdsell, Apollo’s site superintendent, said although working with those materials requires the same basic principles, there was a learning curve in understanding the process, tolerances, and other details.

“With HDPE, the principles of round pipe apply, and we had a subcontractor do the electrofusion joints,” he says. “We relied on their experience, combined with our knowledge of what had to happen and how to install it. With the FRP, that was just duct with flanges, but we had to deal with how to handle it, how heavy it is, and the logistics of having to order it from overseas, rather than ordering it from a local shop.”

The sheer weight of these materials required special consideration in how to phase the project and of what equipment was required—just one piece of the 84-inch pipe weighed in at 9,500 lb.

“We had to get a bigger crane onsite just to do those pieces,”



“In sheet metal, you are usually doing lighter pipes with rigging or crank genies, and for one 35-foot piece to be just under 10,000 lb, it is highly unusual.”

*—Shawn Birdsell, site superintendent,
Apollo Sheet Metal*



Birdsell says. “In sheet metal, you are usually doing lighter pipes with rigging or crank genies, and for one 35-foot piece to be just under 10,000 lb, it is highly unusual. You have to be sure everyone understands the safety requirements and make sure to not overload your slings on the rigging.”

The team also worked hard to meet the strict requirements of hooking up to an existing plant. Because its work tied into the existing operational plant, Apollo had to work within small time allowances when the plant could undergo temporary shut down to certain sections.

“It is an operational waste water treatment plant, so we would get about four hours to rip out the old stuff and install our fitting,” Birdsell says. “We have dealt with those kinds of logistics on past projects.”

The weight, the size, and the learning curve may have been challenging, but having a strong crew made the project an overall success. “Having a good bunch of guys helped,” Birdsell says. “It is big stuff to build in the shop and truck out. Our shop did a great job of fabricating and shipping out the product, and the field was great at coordinating because we couldn’t do multiple pieces at once or deliver multiples in a day because of the size.”

Learn more about Apollo Sheet Metal at <https://www.apollosheetmetal.com> ■





Meet the COVID Kids

The Sheet Metal Workers Training Centre flexed its resilience muscles during COVID using technology, ingenuity, and first class support for its students

By / Jessica Kirby • Photos courtesy of SMWTC

Pick up any newspaper, open any news app and there is no shortage of COVID-19 news—most of it disheartening. In that climate it can be hard to remember that with upset comes opportunity and with obstacles come solutions. The Sheet Metal Workers Training Centre (SMWTC) has created something positive from the circumstances that arose from the pandemic, and though it wasn't always easy, it managed to keep its doors open, keep students safe and learning, and take important steps towards adopting the future of education.

Back in March when British Columbia went into initial restrictions, there were 41 students attending SMWTC in Levels 1, 2, and 3, and there was a lot of fear. Including the instructional staff, there were 48 in the building at once, which met the provincial health officer's (PHO) 50-person limit and meant the school could stay open.

"At full lockdown, the limit was only five, so in a weekend everything changed," says Training Co-ordinator Jud Martell. "We sent those students home on Friday and told them to wait for an email on Monday. On Monday, we taught everyone how to Zoom and had a Zoom meeting in which I introduced the new normal moving forward."

And a new normal it was. Martell and the instructors spent the weekend putting the materials students would require to complete the final two weeks of their training online. They cobbled together a learning package, scrounged loaner computers for those who didn't have them, and provided access to the server for all then-current students—a cohort they are calling The COVID Kids.

"We feel like this was the safest boat to be on in the construction trade during that time," Martell says. "Other schools shut the doors and told students to go away. They didn't even get to pick up their things."

In many ways, the pandemic expedited a situation already in the making—the digitization of part of the training centre's offering. Over the past two years Martell has inched the centre closer to accepting more technological advancements, a mission that started with implementing a server the staff could enter access remotely. The centre's COVID response hinged on that implementation.

Getting through those first few weeks required several pivots or areas of adjustment for the training centre.



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The first pivot was shutting early, following the decision of the trustees and following the PHO's directives.

“We had one week’s notice and then went on to discuss with the training board what closing would look like,” Martell says. “The next was to develop a way to ensure 70% completion by offering the final two weeks of instruction online.”

The third pivot was helping students stay in school and collect EI because they would otherwise have to return to work in the middle of a crisis where their health and safety was not ensured onsite. The fourth pivot was extending the technical training as far as possible, which engaged the students in helping the centre design its remote capabilities and online modules and test its online platforms.

Although all of those decisions were made with the utmost consideration, not everyone reacted favourably. “There was a strong reaction from some who believed we were making the wrong call,” Martell says. “We shut down our socials for months. I truly believed that the best course was not to get out of the boat. My own son was in that class, so there is no doubt I made each decision thoughtfully.”

That was in March and April, in the heart of the panic.

After the initial action, SMWTC cancelled the remaining class schedule for 2020-2021 and spent two weeks informing students that a new schedule would be developed once it was safe and appropriate to do so. Because the classes are concurrent, all 40 classes scheduled between April 2020 and the end of 2021 had to be cancelled.

“At that time, some people still thought the whole thing would be over in June,” Martell says. “The plan was to see if we could come up with a safe, sustainable way forward.”

They scheduled a Level 4 class to begin June 15. It would run for four weeks remote learning and three weeks in the school, knowing that if necessary, the students could achieve 70% completion with the remote portion alone.

“That is how we built in resilience,” Martell says. “The idea was to get Level 4 through and get them to write the inter-provincial exam (IP).”

On June 15, the SMWTC started three classes of eight Level 4s. It started with a Zoom meeting that included 30 people and covered COVID protocol to train onsite. They gave everyone iPads and computers on loan, and set a goal to write the IP on July 31.

The staff and instructors spent four weeks designing the online learning modules and developing protocol for bringing the students in. That meant considering social distance, helping people feel comfortable, and having regular safety meetings.



“On July 30 we held a graduation ceremony—everyone graduated in masks, and people came and sat outside to watch from the lawn and parking lot,” Martell says. “The very next day we had three separate locations of eight each writing the IP, and we just heard back that all 24 passed. In ten years, if those 24 are the leaders of our industry, we will be in good hands.”

On August 24, SMWTC will be starting Level 1 and Level 2 classes running in parallel. A week later, the Level 3s will start, and there will once again be 48 students in total remote learning or on site. Making that work meant hiring six instructors and redesigning the entire space to have separate upstairs and downstairs areas where each class will only be on one level at a time. The schedule will have 24 online and 24 in class at one time, alternating by the week.

Into October, three more classes will begin—a Level 1, a sheet metal Level 3, and an architectural Level 1—to finish the year using the same protocol and scheduling formats.

Looking forward, SMWTC is leveraging its successes and setbacks during this transitional phase to begin offering its drafting portion online. As of the time of writing, Martell has secured a partnership with Microsoft from which the training centre will receive 300 student software seats and with AutoDesk for 1,200 student software seats. He is currently in discussions with Lenova about a hardware donation. The International

Training Institute (iT) has been the most dedicated partner through all of this implementing incredible, dedicated support to the training centre every step of the way.

“Standardizing the hardware and software is a major goal right now,” Martell says. “We need that so there is always a touchstone students can come back to if they get lost.”

Online learning has been the saving grace for the training centre, but it also has its challenges. It is harder to identify online when a student is struggling, and having instructors on-hand to motivate and give individual feedback is irreplaceable. As well, students’ physical fitness suffers when they are not onsite.

“We give students lots of breaks and asked them to exercise, go for walks, and look after their health,” Martell says. “We have a dedicated instructional staff that can’t check in with students the same way. There is also a provincial health emergency going on and the background health emergency—the opioid crisis—all coming together at once. It definitely isn’t easy.

“We are working in the ‘new normal’ while taking all of this into account and putting our students’ health first,” Martell says. “We have built resilience and flexibility into our programming and will continue to adjust things as necessary so the students get the most out of their training and we get the most out of the way they are helping our school evolve and grow.” ■

An advertisement for the Sheet Metal Industry Training Board (SMWTC) featuring a yellow and black color scheme. The main headline is "OUR NEW BLENDED LEARNING MODEL". Below this, the model is split into two columns: "REMOTE THEORETICAL" and "ONSITE PRACTICAL". The remote section lists "ONLINE INSTRUCTION" and "SUPPORTED LEARNING". The onsite section lists "REDUCED CLASS SIZES" and "ENHANCED COVID-19 SAFETY PROTOCOLS". At the bottom, there are two circular logos celebrating 50 years, the organization's name "SHEET METAL INDUSTRY TRAINING BOARD" and "SHEET METAL WORKERS TRAINING CENTRE SOCIETY", the website "www.smwtcs.ca", the phone number "604.882.7680", and social media icons for Facebook, Twitter, Instagram, YouTube, and LinkedIn.

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As Microsoft continues to develop new operating systems, FastEST, Inc. continues to stay ahead of the curve, testing and adapting to new versions of Windows within the FastDUCT and FastPIPE programs.

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AIR CURTAINS

Air Curtains are allowed as a vestibule substitute in the new ASHRAE standard

Good news for building owners, engineers, architects, and HVAC contractors who can now save energy, construction costs, and space in commercial facilities with the latest code update. ASHRAE, the leading policy maker for the heating, refrigeration, and air conditioning industry, has formally approved the use of properly certified and installed air curtains as an exception to the vestibule requirement.

Consulting engineers and architects who previously were hesitant to replace vestibules with air curtains due to inconsistent code language now have the support of ASHRAE Standard 90.1-2019. Furthermore, sheet metal contractors will see a spike in air curtain installations to accommodate facilities looking to prevent energy loss through their main entries and meet building codes. Also, air curtains can now be a recommendation for value engineering because they are roughly only about 10 percent of the total cost of a vestibule in time and materials.



Office and other commercial buildings can now look at retrofitting vestibules and repurpose the space (anywhere from 40-300 square feet) for more productive purposes. Studies have shown that air curtains are equal or more efficient than two-door vestibules as energy savers. Also, air curtains protect against the infiltration of outdoor air, flying insects, wind, and dust through open doorways.

Vestibules maintain an air lock and discourage an open wind tunnel effect where conditioned air rushes through two doors open simultaneously. Unfortunately, the concept is easily defeated by both doors opening at the same time. Air curtain technology draws interior air from the facility and discharges it through long linear nozzles across the doorway.

A properly sized air curtain uses approximately 70-85 percent of the conditioned expensive indoor air and returns it to the space. Also the air curtain separates the indoor/outdoor environments by maintaining AMCA-certified minimum velocities of 400 ft/



By Norm Grusnick, P.Eng.

min at the floor. An air curtain is typically activated by limit activated controls. When the door is closed the options are also available for supplemental heating.

A Canadian University – Concordia- Dr. Liangzhu Wang conducted two third-party studies, “Investigation of the Impact of Building Entrance Air Curtain on Whole Building Energy Use” in 2013 and “Energy Saving Impact of Air Curtain Doors in Commercial Buildings” in 2016. Dr. Wang’s studies concluded that, on average, air curtain protected doorways were proven to save total building energy usage by a factor of 0.3 to 2.2 percent more over that of vestibules.

These studies, as well as ANSI/AMCA Standard 220, that states air curtains maintain 400 ft/min airstream velocity, led to changes in ASHRAE 90.1-2019. ■



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ALL THE DRAMA MOVIES AREN'T ON NETFLIX

How many of you, when you are flipping through the channels, will re-watch a movie you have seen 5 or 10 times? *All of us. The Godfather. Shawshank Redemption. Rocky. The Departed. Jurassic Park. Titanic.* My weakness is *Gladiator*. I've watched that probably 10 times. You know what is going to happen. You know the lines. You enjoy its familiarity, not the surprise or shock of something new.

Well, that is exactly the situation our industry finds ourselves in again. One of two movies is going to play for you, beginning later in 2020 and probably though 2021. And it won't be on Netflix.

These movies represent the economics of our construction marketplace. If you have been at this for any length of time, you have seen them both at least two or three times, and maybe four if you have some grey hairs.

The first movie, most recently re-released in 2008, is rated five stars. Lets call it, *Desperately Shoveling Cash*. The plot is massive infusions of federal infrastructure dollars to put [people] America to work. Infrastructure is the dependable, proven, and fastest way to put people to work. From the Great Depression to the Financial Crisis, government turns to us to generate economic firepower. If we watch this movie, there is



By Mark Breslin

some cheering, fist bumping, the good guys win, and in the end, it bridges the gap to the other side of the recessionary period. If this is happening for us, this will be decided in 2020, and more likely in the next 60-90 days.

The other movie is a one-star, low budget horror flick. Let's call it, *Slashers at the Jobsite*. In this one, the feds cannot, or will not, agree on solutions prior to the election, and the states are on their own. So, that starts with a slashing of sources of funding for the entire market.

Except for the bi-polar stock market, the economic indicators says the sky is kinda falling. And if not now, pretty damn soon. Public entities are already getting nervous with tax revenues in steep decline and their capital budgets looking ripe for reassignment. Private construction owners looking ahead probably need Xanax. Industrial expenditures more or less on hold. Building offices in the Zoom world? Maybe later. And finally, uncertainty on the V recovery, U recovery, or the Nike Swoosh recovery. Ok. So, what to do? Watch that crappy movie. Again. Let's check out your viewing history:

U.S. Recessions Impacting our Industry

- 1980-82
- 1990-91
- 2001
- 2008-09

Unless you are among the many new apprentices** or college graduate project managers who have never seen a hard down market cycle before (welcome to the real world, sons and daughters), the downturn movie is mostly the same. And that familiarity should be an asset—you know the plot.

So, before we grind through it again, 2020 is a time to sit down with your management team and ask the key questions that everyone needs to prior to a market cycle change:

What did we learn from watching and living the last versions of the movie? Let us remind ourselves this is not new and market cycles are normal in our business.

What is our operational edge that we need to focus on right now?

continued on page 22

SMART Local 280 /SMACNA-BC Partnership



Left: Jud Martell, Local Union No. 280 President.
Right: Bernie Antchak, Northwest Sheet Metal Ltd., SMACNA-BC President.



Labour & Management
“Embracing the Challenge”
 - B. Flaherty, Cornell University, Syracuse, N.Y.

WHEN TO LIEN IF A CONSTRUCTION PROJECT PARTIALLY TAKES PLACE ON NON-LIENABLE LANDS

Although a potentially helpful tool for securing payment, builders' liens can be tricky to implement in practice. Courts review liens very strictly; if they are not drafted with care and absolute accuracy, they can be invalidated. Among other things, a lien claimant must be able to satisfy a court that it has performed work in relation to an improvement on the specific lands over which the lien is claimed.

The BC Supreme Court recently considered the case of *JVD Installations Inc. v. Skookum Creek Power Partnership*, in which liens had been filed against lands on which the lien claimants did not perform any physical work, and that comprised only a small portion of the overall project which mostly took place on lands that could otherwise not be liened under the *Builders Lien Act* ("BLA"). The court confirmed in this case that a lien can be claimed where the work claimed for forms an "integral and necessary part" of an integrated construction improvement, even if a lien claimant cannot actually prove that its work directly benefited the land against which the lien is filed.

The Facts

In this case, the plaintiff (the "Subcontractor") acted as a subcontractor for the construction of most of the components of a run-of-river hydroelectric project (the "Project"). The Subcontractor then further subcontracted its scope of work to another company that was its wholly-owned subsidiary (the "Sub-Subcontractor").

A number of factors, including delays resulting from unanticipated site conditions and damage to integral components of the Project led to a payment dispute. This dispute led the Subcontractor and Sub-Subcontractor to file claims of lien. However, the Project was located almost entirely on lands owned by the Crown (the "Crown Lands"), which are generally not subject to claims of lien. Only a small portion of the Project consisting of power transmission lines running across statutory rights-of-way on privately owned lands (the "Transmission Line Lands") could be liened. Neither the Sub-Contractor nor the Sub-Subcontractor provided work on the Transmission Line Lands themselves. Because liens could not be claimed against the Crown Lands, the Subcontractor and Sub-Subcontractor attempted to file liens against the Transmission Line Lands.

The Decision

The Court was called on to decide whether these lien claims were valid, ultimately finding both to be proper lien claims



By Andrew D.R. Delmonico, Partner,
and Ted R. Lewis, Kuhn LLP

in the circumstances. In coming to this decision, the Court noted the BLA "does not require a lien claimant to perform or provide work 'on' the lands described in a lien; it requires the lien claimant to perform or provide work 'in relation to an improvement' located on lienable lands." Where, as here, the claimants could demonstrate that the work performed was "integral and necessary" to such an improvement, the lien claims could succeed. Ultimately, the court held that all parts of the Project, including those on the Transmission Line Lands, formed a single integrated improvement. The Subcontractor and Sub-Subcontractor were entitled to claim liens over the lienable portion of that improvement, even if they had not directly supplied work to that part of the Lands.

Lessons Learned

- 1 If you perform off-site work, you may still have a valid lien claim if your work is sufficiently connected to the actual construction taking place on the lands you are seeking to lien.
2. You may also have a lien claim against lands on which only part of an improvement is taking place. If you work on any part of a project that forms a single, integrated improvement, it may give rise to a valid lien claim on some lands even where claims are prohibited on other parts of those lands. ■

This article was written by Andrew D.R. Delmonico, partner, and Ted R. Lewis, articulated student, who practise in construction law with the law firm of Kuhn LLP. This article is only intended as a guide and cannot cover every situation. It is important to get legal advice for specific situations. If you have any questions or comments about this case or other construction law matters, please contact us at 604.864.8877 (Abbotsford) or 604.684.8668 (Vancouver).

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News

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CONTRACTORS 101

continued from page 20

What market pivots would be smart to make now that will pay off later?

What are the discretionary vs essential investments we need to make in people, programs, technology, training, or equipment to get to the other side?

What sacred cows, processes, legacy BS, or other barriers need to be eliminated because a good shock to the system is a fine time to enact change?

What sacrifices, economies, or leaning out can and should we do to roll through market instability? Where is the maximum ROI?

I have seen both of these market trends and, as an organizational leader, it doesn't freak me out or leave me wondering what to do. I have always tried to think and act in "what is most important now" mode, so when the situation hits the fan, my organization is not facing conflicting resource priorities. Disciplined ROI is the name of the game: to improve operational or economic outcomes for your companies.

So, the show is about to start. The coming attractions look mixed. Settle back with your popcorn and take a breath. 2020 will likely be a decent year based on back logs and current market momentum, but the path ahead is quite clearly one requiring additional forethought and vision. I can tell you that the theatre is packed (social distance doesn't apply here) as we ride it out together. For the question of ROI, though we cannot guarantee a happily-ever-after ending to the movie ahead, you are going to want your team aligned in the seats behind you, watching your back.

** Note: every apprentice, project manager, or other employee who started work for you in the last 10 years has never seen a downturn. In fact, they have been employed in a period of unprecedented opportunity. The ability to manage expectations, emotions, and compensation will be another management challenge in 2020 and beyond.) ■

Mark Breslin is an author, speaker, CEO, and influencer at the highest levels of business in North America. He has spent decades advising CEOs and senior leaders in business, government, labour, and non-profit arenas in both the United States and Canada. His five bestselling books have sold hundreds of thousands of copies and have improved leadership, accountability, profitability, innovation, and engagement for organizations and individuals. See his work at www.breslin.biz

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